

FIGURE 1

MSQSPRFVTRRGSLKAAPGAGTRRNESQDYLLMDELGDDGYPQLPLPPYGYYPSPFRGNENRLTHRRQTI
LREKGRRLANRGPAYMFNDHSTSLSEERFLDAVEYGNIPVVWKMLEECHSLNVNCVDYMGQNALQLAV
ANEHLEITELLKKENLSRVGDALLLAISKGYVRIVEAILNHPSFAEGKRLATSPSQSELQQDDFYAYDE
DGTRFSDVTPIIILAAHCQEYEIVHTLLLRKGARIERPHDYFCKCTECSQKQKHDSFSHSRSRINAYKGLA
SPAYLSLSSDPVMTALELSNELAVLANIEKEFKNDYRKLSMQCKDFVVGLLDLCRNTTEEVEAILNGDAE
TRQPGDFGRPNLSRLKLAIKDEVKKFVAHPNCQQQLLSIWYENLSGLRQQTMAVKFLVVLAVAIGLPFLA
LIYWCAPCSKMGKILPRPFMKFVAHAASFTIFLGLLMNAADRFEGTKLLPNETSTDNARQLFRMKTSCF
SWMEMLIISWVIGMIWAECKEIIWTQGPKEYLFELWNMLDFGMLAIFAASFIAFMAFWHASKAQSIIDAN
DTLKDLTKVTLGDNVKYYNLARIKWDPTDPQIISEGLYAIIVLSFSRIAYILPANESFGPLQISLGRTV
KDIKFVMVIFIMVFVAFMIGMFNLYSYYIGAKQNEAFTTVEESFKTLFWAIFGLSEVKSVVINYNHKEIE
NIGYVLYGVYNVTMVIVLLNMLIAMINSSFQEIEDDADVEWKFARAKLWFSYFEEGRTLPPVFNLPSPK
SLLYLLLKFKKWMCELIQGQKQGFQEDAEMNKRNEEKKFGISGSHEDLSKFSLDKNQLAHNKQSSTRSSE
DYHLNSFSNPPRQYQKIMKRLIKRYVLQAQIDKESDEVNEGELKEIKQDISSRLRYELLEKSQNSDLAE
LIRKLGERLSLEPKLEESRR (SEQ ID NO:2)

FIGURE 2

underlined = deleted in targeting construct

BOLD = sequence flanking Neo insert in targeting construct

CGCCTGTGCCCTCTGCCTGGGAGCCTGGGGCCGCCTGTCTGCGCGGTCCGGATGCGCTCAGGTCAAGGTTCCCT
 TTCGCGGCTGTCTCCCAAGCCCCCTAACTAGTGACTTCCACTGTGGCGGGCAGGGAAGCCATTGGCAGAACCTA
 GCCAGTCAGGAATCTGCATCTCTTCCCTCATTATCCTCTCCCTGGCATTGCTTTGCTCGGGTCCAGCTCAGTT
 GGTGACGCGGCCCCCTTCTCCCCAGGTTGGGATCCACGGAAGCAGGGGTGCAGGCCGGCCAGGCACTGTGCCAT
 GAGCCAGAGCCCCGAGGTTTCGTGACCCGGAGGGGCGGCTCTCTAAAGGCTGCCCCCTGGAGCCGGCACCCGGCGC
 AACGAGAGCCAGGACTATTTGCTGATGGACGAGCTGGGAGACGACGGCTACCCGCAGCTCCCGCTGCCACCGT
 ATGGCTACTACCCAGCTTCCGGGGTAATGAAAACAGACTGACTCACCGGCGGCAGACGATTCTTCGTGAGAA
 GGGAAGAAGGTTAGCTAATCGAGGACCAGCATACATGTTTAAATGATCATTCAACAAGCCTGTCTATTGAGGAA
 GAACGCTTTCTAGATGCAGTTGAATATGGCAACATCCCAGTGGTCTGGAAGATGCTAGAAGAGTGTCAATCCC
 TCAATGTAACTGTGTGGATTACATGGGCCAGAATGCCCTACAGCTGGCTGTGGCCAATGAGCACTTGGAAT
 CACAGAGCTGCTACTCAAGAAGGAAAACCTTGTCTCGAGTTGGGGATGCTTTACTTTTAGCCATTAGTAAAGGT
 TATGTACGGATTGTGGAGGCAATCCTCAACCATCCATCTTTTGCTGAAGGCAAAAGGTTAGCGACAAGCCCCA
 GCCAGTCTGAACTTCAGCAAGATGACTTTTATGCCTATGATGAAGATGGGACGCGGTTCTCCCATGATGTGAC
 TCCAATCATTCTCGCTGCACATTGCCAGGAATATGAAATTGTGCATACCCTCCTGAGAAAGGGTGCCCGGATT
 GAGCGGCCTCATGATTACTTCTGCAAGTGTACAGAATGCAGCCAGAAGCAGAAGCATGATTCCTTCAGCCACT
 CTAGATCCAGGATCAATGCATACAAAGGTCTGGCAAGTCCAGCATACCTGTCATTGTCCAGTGAAGATCCAGT
 CATGACTGCTTTAGAACTTAGCAATGAGCTGGCAGTGCTTGCCAACATTGAGAAAGAGTTCAAGAATGACTAC
 AGGAAGCTGTCTATGCAGTGCAAGGATTTCTGTTGTTGGTCTCTTGACCTCTGCAGAAACACAGAGGAAGTGG
 AGGCCATCCTGAATGGGGATGCAGAGACTCGCCAGCCCCGGGGACTTCGGCCGTCCAAATCTCAGCCGTTTAAA
 ACTTGCTATTAAGGATGAAGTAAAAAAATTTGTGGCTCATCCAACTGT**CAGCAACAGCTCCTGTCCATATGG**
TATGAGAACCCTCTCTGGTTTACGGCAGCAGACCATGGCAGTGAAGTTCCTCGTGGTCTTGCTGTTGCCATTG
GATTGCCCTTCTGGCTCTCATATACTGGTGTGCTCCTTGAGCAAGATGGGGAAGATATTGCCGAGACCGTT
 CATGAAGTTTGTAGCACACGCAGCCTCCTTCACCATTTTCTGGGGCTGCTCGTCATGAATGCAGCTGACAGA
 TTTGAAGGCACCAAGCTCCTCCCTAATGAAACCAGCACAGATAATGCAAGGCAGCTGTTTCAGGATGAAAACAT
 CCTGTTTCTCATGGATGGAGATGCTCATTATATCCTGGGTAATAGGCATGATATGGGCTGAATGTAAAGAAAT
 CTGGACTCAAGGCCCAAAGAATACTTATTTGAGTTGTGGAATATGCTTGACTTTGGAATGCTGGCAATCTTT
 GCAGCATCATTCAATTGCAAGATTTATGGCGTTCTGGCATGCATCCAAAGCTCAGAGCATCATTGATGCAAATG
 ATACTTTAAAGGATTTGACAAAAGTCACACTGGGGGACAACGTTAAATACTACAATCTGGCCAGGATAAAGTG
 GGACCCTACTGATCCTCAGATCATCTCTGAAGGTCTTTATGCAATCGCTGTGGTTTTAAGTTTCTCCAGAATA
 GCTTACATTTTACCAGCAAATGAAAGCTTTGGACCTCTGCAGATTTCACTTGGAAGAACAGTGAAAGATATCT
 TCAAATTCATGGTCATATTCATCATGGTGTGTTGTAGCCTTTATGATTGGAATGTTCAACCTTTACTCCTACTA
 CATTGGCGCAAAACAGAATGAAGCATTCAACAACAGTTGAGGAAAGTTTTAAGACACTGTTCTGGGCTATCTTT
 GGTCTTTCTGAAGTGAAGTCAGTGGTCATTAATACTACAATCACAAGTTCATTGAAAACATCGGCTACGTTCTGT
 ATGGTGTCTATAATGTCACAATGGTCATTGTTTTGCTAAATATGTTAATTGCGATGATCAATAGTTCATTCCA
 GGAAATTGAGGATGATGCGGACGTGGAGTGAAGTTTGCAAGGGCCAAATTTGTGGTTTTCTACTTTGAGGAG
 GGGAGAACACTTCCTGTCCCCTTCAATCTTGTACCAAGTCCAAAATCCTTGCTTTATCTCCTATTGAAATTTA
 AGAAATGGATGTGTGAGCTCATCCAGGGTCAAAAGCAAGGCTTCCAAGAAGATGCAGAGATGAACAAGAGAAA
 TGAAGAAAAGAAATTTGGAATTTAGGAAGTCACGAAGACCTTTCAAATTTTCACTTGACAAAATCAGTTG
 GCACACAACAAACAATCAAGTACAAGGAGCTCAGAAGATTATCATTTAAATAGTTTTCAGTAACCTCCAAGAC
 AATATCAGAAAATCATGAAGAGACTCATTAAGATATGTATTGCAGGCCAGATTGATAAGGAGAGCGATGA
 GGTGAATGAAGGGGAATTGAAGGAAATTAAGCAAGACATCTCAAGTCTCCGTTATGAACTCCTTGAAGAGAAA
 TCACAGAACTCAGAAGACCTAGCAGAGCTCATTAGAAAACCTCGGGGAGAGACTGTCGTTAGAGCCAAAGCTGG
 AGGAAAGCCGCAGATAGAGCAGAGCCCCCTCAGAAGTGCATATTTATTTCTCACTTGAAGCCATATTATTTTC
 TGACTTATTTTTTTAAGTGTCAATGATAAAAAGTATGTTAACTGATAACTTGGATCATTAGAGTCCTAATAT
 CAAGCTTTTTTGGGAGATTAAATTGCATTGCTGAGGGCTAACAATTGCTG

FIGURE 3

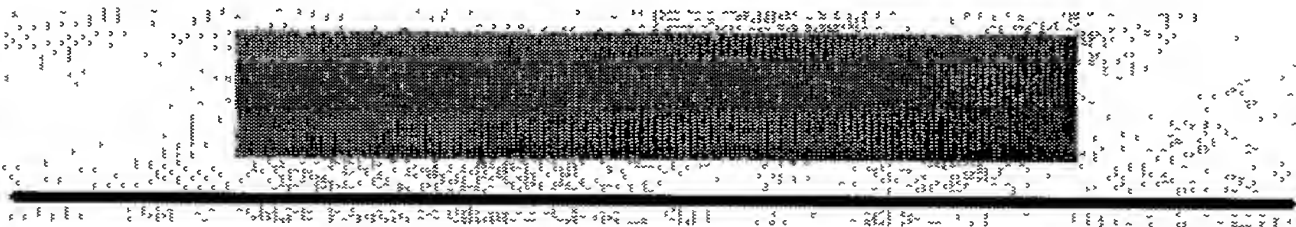
Gene Sequence Structure *

1497 bp

Sequence Deleted

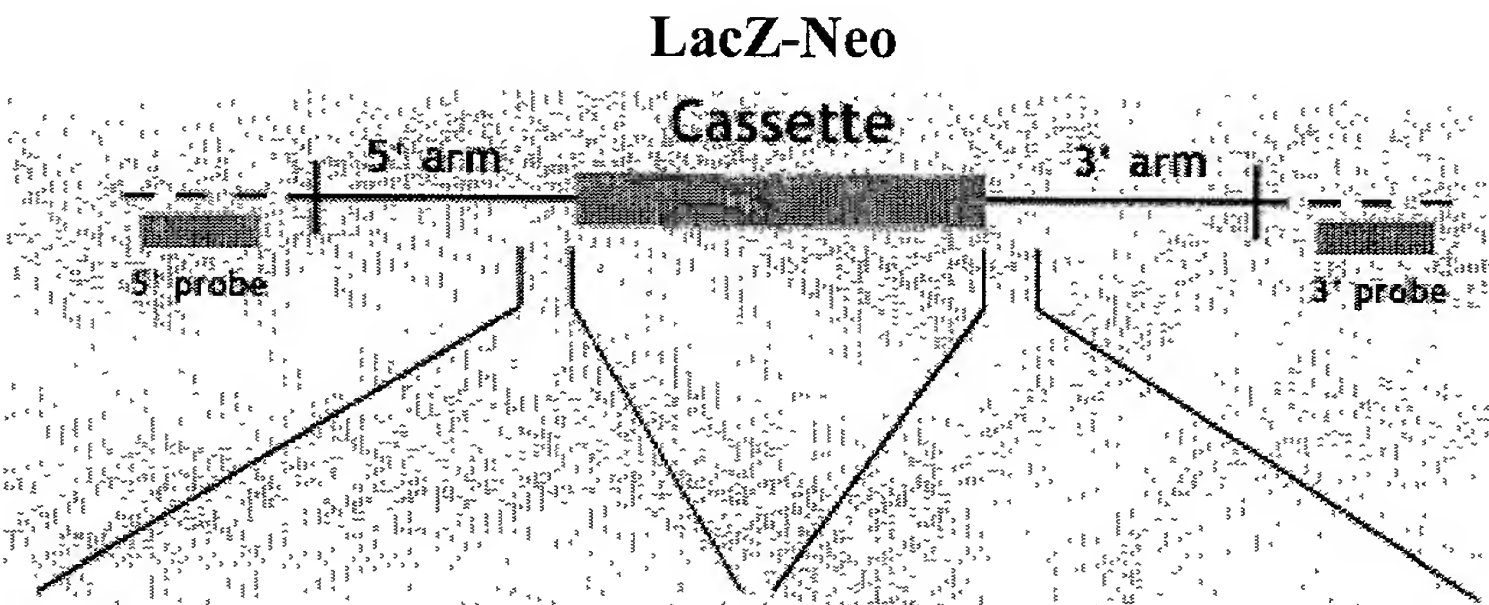
1509 bp

Size of full-length
cDNA: 3261 bp



Targeting Vector*
(genomic sequence)

Arm Length:
5': 3.5 kb
3': 1.5 kb



Targeting Vector
Endogenous Locus
* Not drawn to scale

5' >TCCTCAATTCTAACTGCATTT CTTCTGGAAAAGAATAAAACGATT CACCAGAGCTCCAGAGGATAGCCT AAGCTGAGTTGTTTTTAATCAAAT CATTCTGTGTGCTGTCTCACCCCT AGTTTGTGGCTCATCCAAGCTGTC AGCAACAGCTCCTGTCCATATGGT ATGAGAACCTCTCTGGTTTACGGC AGCAGACCATG<3' (SEQ ID NO:3)	5' >TCGTGGTCCTTGCTGTTGCCA TTGGATTGCCCTTCCTGGCTCTCA TATACTGGTGTGCTCCTTGCAGCA AGGTATGTCTGTGAGTCCTGCAGT CCATCTGTAGTTGAATTCTGTCCA GCAGGCAAAGATCTAGCTCCAAAA TGAAAATATGATTTGAAGTACACA GGTTCACATAATCTTTCTATTTGT TTGAGAATTTTC<3' (SEQ ID NO:4)
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FIGURE 4

5/5

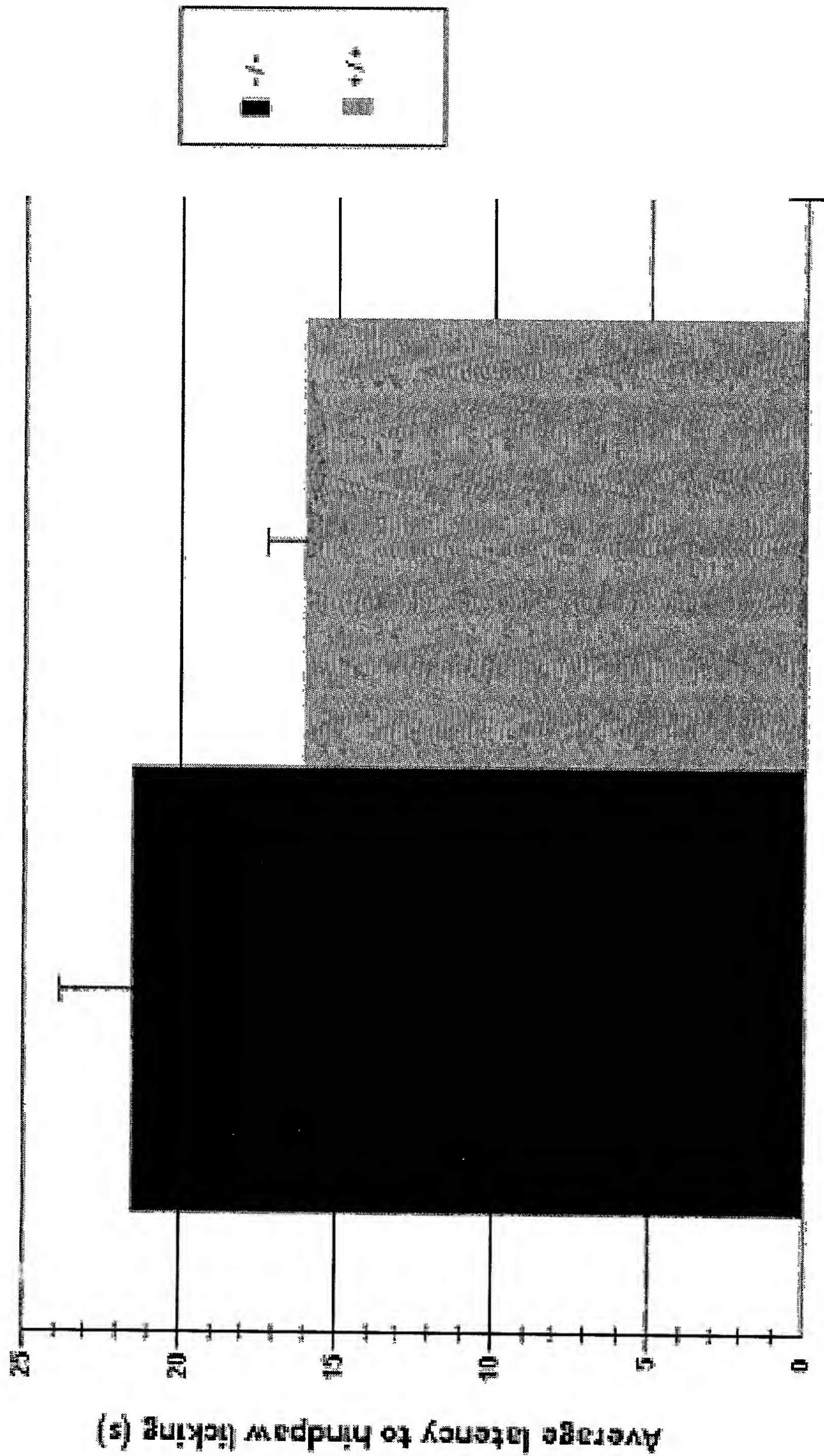


FIGURE 5